The MAC Flyer

MARCH 1979

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in MAC Air Operations

The MAC Flyer

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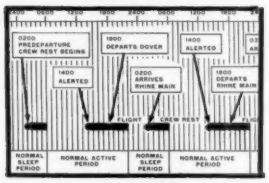

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FLYER FORUM

Smoke In The Cockpit

The mission was a C-130 navigator training flight. Everything proceeded as planned. Pre-flight checks, engine start, taxi, and take-off were routine and uneventful. There I was sitting at the nav table reminiscing about a previous TDY at Clark AB and an unforgettable night at the Fire Empire. Then, suddenly, it began to creep up on me. I first detected it by a twitching sensation in my nostrils. A sting came to my eyes as my nasal passage became parched and dry. A warm sensation traveled to my ears as they seemed to detect an imminent danger. Quickly I turned around. Smoke was billowing on the flight deck. Instinctively I darted from my seat, grabbed the flight deck fire extinguisher; and whirling about while pulling the pin, I quickly hosed down the flight engineer as he puffed away on a cigarette.

How often have you as an aircrew member felt like doing this? There may certainly have been good reason to. In our imminently advanced society the danger of inhaling cigarette smoke, both actively and passively, has been widely publicized. The Air Force has demonstrated concern by printing AFR 30-27 "Smoking in Air Force Facilities." The regulation reads, "The Air Force supports the findings of the Surgeon General of the United States regarding the hazards of smoking; must ensure the best possible conditions for the health and welfare of all its personnel."

Last time I checked, aircrewmembers also fall under the category of "personnel." However, the regulation does not make any specific reference to smoking in USAF aircraft.

It is bewildering to think that people are intelligent enough to operate sophisticated aircraft, but lack the common sense to realize that their bodies need clean air to remain healthy. Especially since such a tremendous amount of research and scientific information validate the perils of cigarette smoke.

Most people are familiar with the effects of smoking on the respiratory system. Cigarette smoke irritates the bronchial lining and gradually destroys the cilia, which are little hair-like structures that act as filters. Upon destruction of the cilia the body produces mucus which coats the bronchial lining. Most of the impurities remain trapped with the mucus in the lungs and this leads to the familiar "smoker's cough." If the habit is not broken abnormal cell growth spreads and soon cancer is very likely to take over.

Smoking also affects the circulatory system. Carbon monoxide in cigarette smoke reduces the ability of the blood to carry and transfer oxygen. This causes an increased strain on the heart as it pumps faster in an effort to overcome the deficit. The nicotine in tobacco smoke causes constriction of the capillaries, thus blood pressure increases. The body becomes a very inefficient machine, forced to work harder for less. Vision also is affected and muscular control and reaction are compromised.

If you think smokers themselves are the sole "beneficiaries" of these problems, guess again. A recent study conducted by Dr. Wilbert S. Aronow at the Long Beach Veterans Administration Hospital in California, found that a non-smoker near a cigarette smoker is facing the same risk as if he were smoking. Dr. Aronow's findings are published in the current issue of the *New England Journal of Medicine*. A well known scientist at Heidelberg University highly recommends general prohibition of smoking at work places and says that such a prohibition could prevent more deaths than all other occupational health precautions together. Professor Ferdinand Schmidt, Chairman of the Institute for Preventive Cancer Research of the University of Heidelberg confirmed that smoking is the main cause of chronic bronchitis. Each year, in the Federal Republic of Germany, approximately 17,000 employees have to quit their jobs, and 18,000 others die due to this disease.

The time to act is now! The choice of a polluted or clean environment is far too important and personal to be left up to an aircraft commander. Let smokers know your feelings about the air we all have to breathe.

Ted W. Greenfield, 1Lt, USAF
6594 Test Group (AFSC)
Hickam AFB, Hawaii

Honorable Mention, 1978 MAC Flying Safety Writing Contest

Ah, So Now

Even an experienced pilot can take a hit in the ego when overconfidence overrules flying skill.

Ah, so now you're a pilot.

"But not *just* a pilot," you modestly reply. To be more precise, "a genuine, certified driver of heavier-than-air machines, and in many cases, *extremely* heavier-than-air machines. Truly capable of manipulating anything that flies," you are forced to admit in a satisfying rush of self-confidence.

My feelings exactly. At least those *were* my feelings. I hasten to point out at this juncture that I do not, as a rule, like to open to public scrutiny severe wounds to my pride. However, if some personal bleeding on the printed page will save some dauntless Daedalus from a similar misfortune, I will make the sacrifice.

It was a lazy Sunday afternoon and I was spending the last four days of a two week leave with my parents in Ft. Wayne, Indiana. I had recently finished C-5 copilot school and having spent the previous year flying O-2As in South Vietnam, I admit to being quite pleased with my successful transition to *the heavies*. As I suggested before, my confidence level was well above average. Even the most demanding self-appraisal left little doubt that my aerial expertise was second-to-none. This conclusion, however, was soon to be tested.

My father entered the living room where I was only moderately interested in finishing a *National Geographic* article describing, if memory serves me correctly, Florida's walking catfish. The presence of my father offered a welcome diversion. As was generally the case, our conversation turned to my favorite subject—flying. While we were discussing the relative capabilities of various military and civilian airplanes, it suddenly occurred to me that I had never taken my father flying. What an oversight! How could he be proud of me if he had never seen me with stick and throttle firmly in hand. (Or as it was to turn out, yoke and throttle.) Most sons want their fathers to be proud of them and going flying with my dad seemed a superb way to show him that all of his sage counsel and advice throughout my childhood had not been in vain.

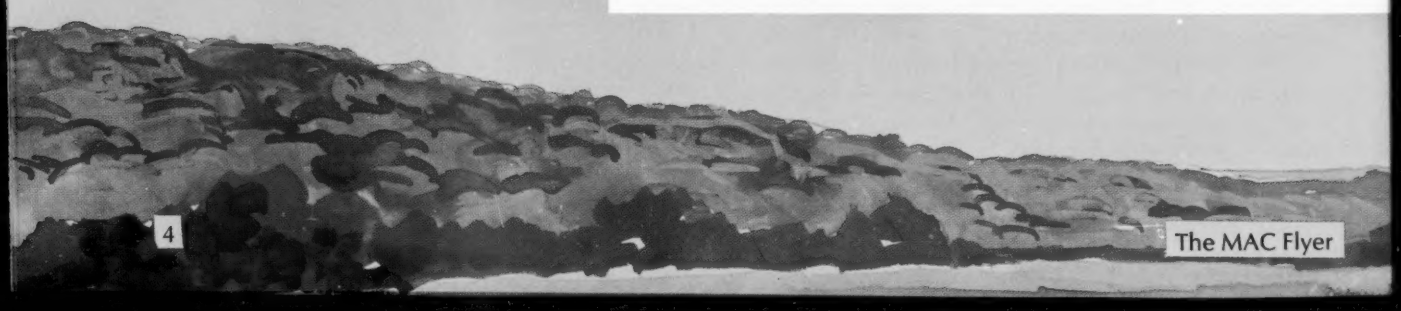
"Dad, why don't you break away from the office early tomorrow afternoon and you and I will go flying," I suggested excitedly.

"Are you checked out in any of the airplanes over at Smith Field? I don't think they'll let you rent their planes if you aren't," he replied, somewhat more hesitantly than I would have liked when presented with such a great idea.

"No problem, I've got time in Cessna 172s and 150s and all I'll have to do is go over tomorrow morning, grab an instructor, do some stalls and falls; a couple prangs and goes—basically demonstrate some cockpit competence and we'll be all set," I explained in my most perfect and professional pilotese.

"OK, sounds like fun," he said, a bit more enthusiastically.

A quick phone call the next morning set up a checkout ride in a 150 and reserved the plane for an hour that afternoon. At the appointed time, I presented myself, log book in hand, before the counter of the flying and rent-a-plane service and announced that I was there for a 150 checkout. Wearing a piercing red bowling shirt with a large "I'd rather be Flying" patch where the name of the bowling team should have been, the lady behind the counter looked up from the monthly flying magazine she was reading, smiled, and said that the instructor



ou're A Pilot

by Capt J. David Patterson
HQ MAC Briefing Team

would be right with me. She dropped her head back into the pages and no further conversation took place.

I started toward a table where several dogeared issues of *Trade-A-Plane* were randomly placed, but before I could get there my instructor entered from a room in the back of the office. It was instantly obvious that this was my instructor, for aside from the words "Flying Instructor" embroidered over his bowling shirt pocket, there was a pair of typically civilian sun glasses hanging by the ear piece from the shirt pocket—the kind with the funny tear-drop silvered lenses. I guessed that the bowling shirt was an attempt on the part of the management to put their employees in uniform. He walked over to the counter and in a voice that exuded authority, asked if his nine o'clock student had arrived yet. The head behind the flying magazine emerged for the second time since I had arrived and an outstretched finger moved up from behind the counter and pointed in my direction. He glanced at me and as if suddenly realizing I was there, turned on his instructor-to-student smile and moved toward me with an outstretched hand.

"Well, are you my student?" he asked. I did not like his indiscriminate use of the possessive case and liked the idea of being a student even less. I quickly established our relative positions in the world by explaining that I was there just to check out in one of their 150s.

"Oh, you're already a pilot," he said, somewhat deflated. "May I see your pilot's license?" he requested, with slightly more politeness in the tone of his voice.

I handed him my license, he looked at it with about the right amount of scrutiny, and then indicated that the preliminaries were over and suggested that we go out to the plane. We did a walk-around and seeing nothing amiss with the aircraft, got in and strapped ourselves down. The checkout was uneventful. I did have to be reminded about pushing the carburetor heat in before advancing the throttle during a go-around, but nothing too serious. In fact, I was quite pleased with how the ride went. Back in the office, I paid my money and was given a card signed by the instructor granting me the privilege of renting the Cessna 150s. I left, reflecting on the experience as not being too taxing and looking forward to taking my dad flying that afternoon.

It was a little after four o'clock

when I again pulled into the airport parking lot. My father was waiting and after a quick greeting we both went into the flying service office. You guessed it—behind the counter, piercing red shirt still had her head in a magazine. I stood in front of the counter for several silent moments without the slightest reaction from her. Finally, after I loudly cleared my throat, she looked up somewhat startled. "Oh, you're back," she said.

"Yes, I am. I have 462 Tango reserved at four o'clock. Is it available?" I inquired.

"Oh, yes," she said, as she rummaged through a cigar box full of keys she had on the counter. "Aha, here they are. It's all gassed and ready," she said, handing me the keys. I thanked her, signed my name on the rental form and my dad and I walked out to the ramp where 462 Tango was parked.

Preflighting a Cessna 150 is not a time consuming task, but perhaps I took a little longer than normal, explaining every detail to my one man audience. I did want to appear as professional as possible, running my hand along the prop looking for nicks, checking brake pads for wear, and cotter pins for correct placement at the ends of the hinges on the ailerons, elevator and rudder. We both got in, and I dug out the checklist which was printed on a five-by-seven-inch card stuffed in the side pocket of the door. With meticulous care, I went through each step of the Before-Engine-Start, Engine-Starting, Before-Taxi, Run-up and Before-Takeoff checklists. The engine sounded smooth and sure as I advanced the throttle and taxied into takeoff position. Making sure to carefully clear for approaching aircraft, I began feeling more confident about handling this little flying machine each minute.

The winds were slightly off the runway heading, but the spry little bird never varied from the center line as we accelerated to liftoff velocity. Slipping into the air, the airplane climbed out smoothly and soon we were cruising at 2500 feet. We flew for a while and when we were out of the local airport traffic, I offered the controls to my dad. I coached him through a few steep turns and power-on and power-off stalls, then took the controls and pointed us back to the field. I wanted to do a number of touch-and-goes. After all, if you are going to impress the uninitiated with your aerial expertise, you need to make some smooth landings.

What is really impressive? Pull the power to idle, lower full flaps, turn on to a base leg and then land on a predetermined spot without ever touching the power. It was during one of these maneuvers that my confidence displaced my common sense. I made a tight pattern to the shortest runway, put down full flaps, carb heat on, and entered a steep descending turn to final. The touchdown had just the slightest hint of a squeak as the tires caressed the asphalt. Smiling, I advanced the power for the touch-and-go. Not so suddenly, the little airplane was 25 feet in the air, and barely flying. Re-

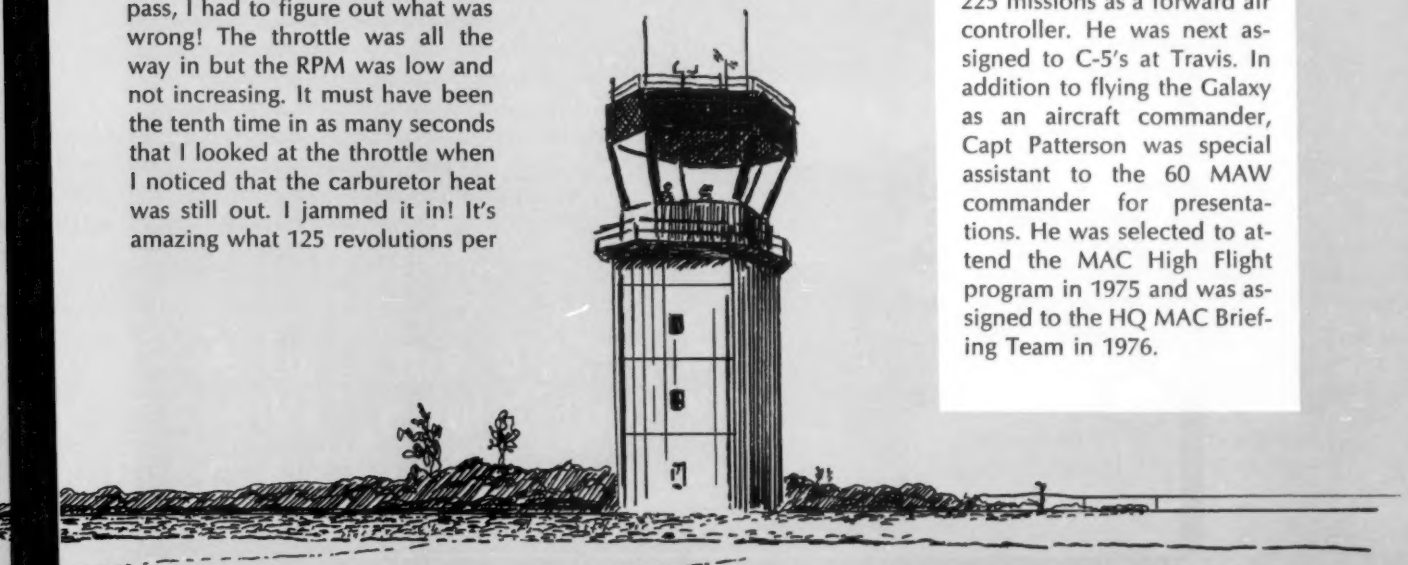
flecting on the incident, I think I could have made a much better assessment of our deteriorating situation had I not been distracted by the blaring stall warning horn. The airplane that had been so perky and full of life a few minutes before was suddenly a wallowing, floundering and helpless thing. I quickly glanced at the ground. The end of the short runway had long since passed and with it any chance of putting the craft back on the ground. The airspeed just wouldn't increase and we were beginning to have a much closer look at the corn field located off the departure end of the runway. I slowly milked the flaps up and thankfully the stall warning horn became silent and our airspeed hung just above the stall. Even so, we were rapidly closing on the highway overpass in front of us. Flaps were up but still no speed! Not wanting to become a splash of color on the otherwise dull gray concrete overpass, I had to figure out what was wrong! The throttle was all the way in but the RPM was low and not increasing. It must have been the tenth time in as many seconds that I looked at the throttle when I noticed that the carburetor heat was still out. I jammed it in! It's amazing what 125 revolutions per minute will do for airplane performance. I heaved a sigh as the airspeed increased steadily and we climbed. We made the next landing the last and while we were walking back to the office, my dad, who had not said much during or after the experience, turned and observed rather casually, "On that last touch-and-go we didn't climb as fast as the other time." I made a lame comment about the engine being a little sluggish and silently hoped that my image was still somewhat intact, since the rest of my composure was, at best, in shambles.

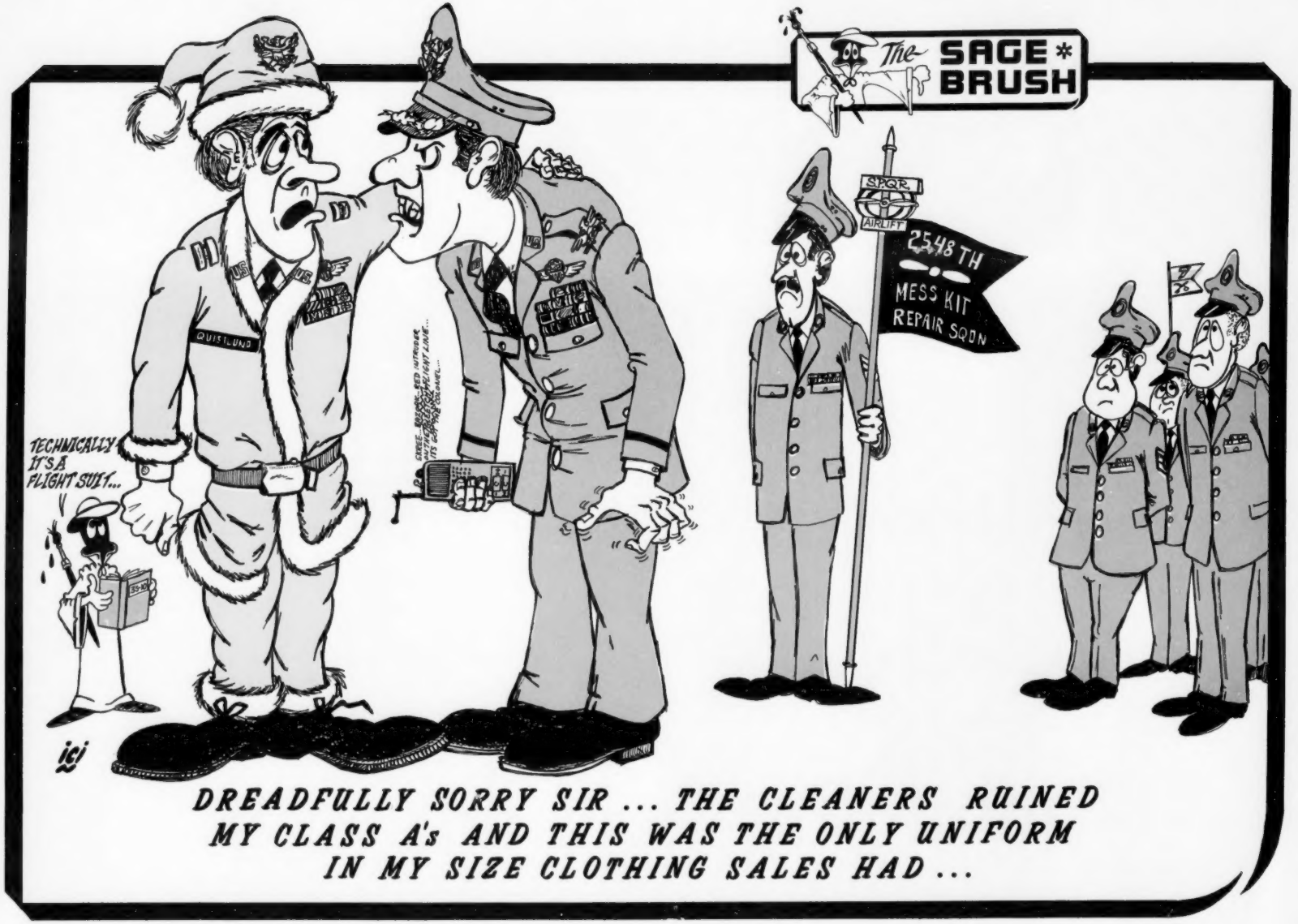
•••

The lesson here is not subtle. Regardless of how many hours you have or how many different planes you've flown, don't let unfounded confidence guide your flying performance. You *can* make a mistake from which you will never recover.

ABOUT THE AUTHOR

Capt J. David Patterson was commissioned through OTS in 1970 after graduating from Bethel College in St. Paul, Minnesota. He completed pilot training at Reese AFB, Texas, and was subsequently assigned to the 21st TASS at Tan Son Nhut AB, Vietnam, where he flew over 225 missions as a forward air controller. He was next assigned to C-5's at Travis. In addition to flying the Galaxy as an aircraft commander, Capt Patterson was special assistant to the 60 MAW commander for presentations. He was selected to attend the MAC High Flight program in 1975 and was assigned to the HQ MAC Briefing Team in 1976.

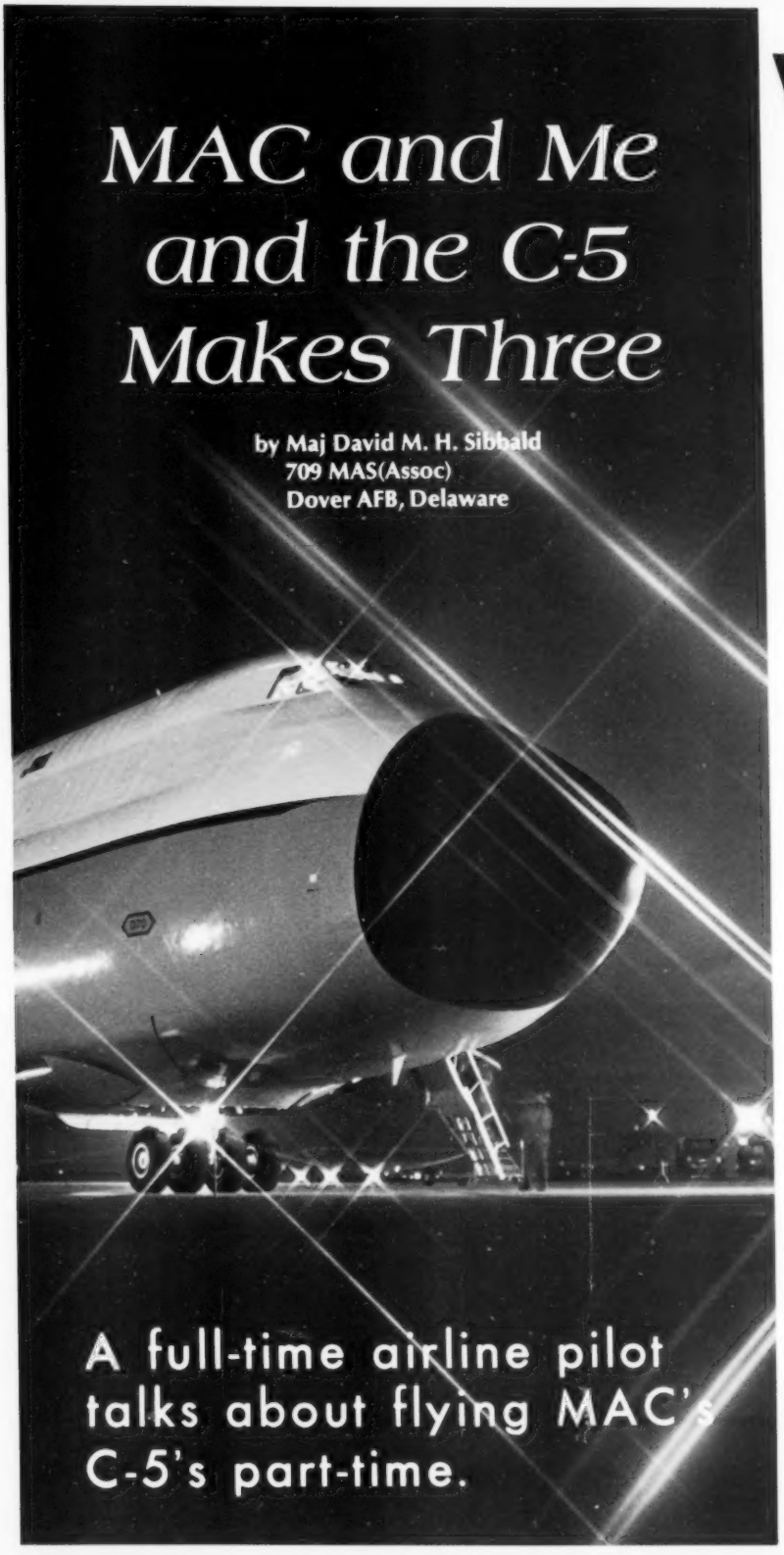




DREADFULLY SORRY SIR ... THE CLEANERS RUINED MY CLASS A's AND THIS WAS THE ONLY UNIFORM IN MY SIZE CLOTHING SALES HAD ...

MAC and Me and the C-5 Makes Three

by Maj David M. H. Sibbald
709 MAS(Assoc)
Dover AFB, Delaware



A full-time airline pilot talks about flying MAC's C-5's part-time.

We are out of 23 for 24 and New York has just obligingly cleared us "direct Nantucket, climb to and maintain FL 330." I acknowledge and watch as Gilmartin, the copilot, swings the nose in a gentle arc and points it out to sea. We are less than an hour out of Dover, Delaware, and our equipment tonight is a Lockheed Galaxy, a Military Airlift Command C-5A. If my TWA chief pilot were here tonight he'd be turning a good bit grayer than he already is because he would have perceived what has just occurred to me. All four of us on the darkened flight deck are Air Force Reservists; all four of us fly for the airlines; and, so help me, all four of us are flight engineers. By airline standards, there's not a pilot on this flight deck! I check again to be sure. It's true; Gilmartin, the copilot is third man on a Continental 727; Harvey Sigmund, flight engineer, sits sideways at Capitol; Swirnow, navigator, flies the friendly skies as a second officer; and I, in command of this undeniably motley crew go up, up and away on TWA's international routes. I am pleased with my jewel of a discovery and tentatively, I reveal it to Gilmartin. His eyes widen in mock alarm, but as usual, he is unflappable. "Oh, I guess we'll muddle through somehow."

We do a good deal better than that, of course. The MAC system of standardization has taken airline pilots of every imaginable stripe plus greengrocers, policemen, schoolteachers, and even a taxidermist, and welded them into an effective airlift force. It works extremely well.

We are finally level at FL 330 and a friend aboard TWA 830 recog-

nizes my voice in the night air. "Are you in command of that thing tonight?" He asks. Thing!!! How dare he! "Are you in command of that thing tonight *sir*," I reply. There is a chuckle in the darkness. "O.K., *sir*, but wait until next week." Next week, of course, I shall be seated behind him, flying sideways and the sir will be on the other foot. Since he is at FL 370 where the winds are better and since he's doing .80 to my .77, he soon pulls away and is lost in the night.

Airline pilots always ask what it's like to fly the C-5 and unfortunately, there is nothing terribly exciting to tell. The Galaxy is, in fact, a real pussycat. The actual feel of it is a lot like a heavy, fan-powered, 300 series 707. It is solid, perhaps heavy in roll, and nicely sensitive in pitch. It is perhaps a little easier to control than the 707 during V_1 cuts since it has, relatively, a lot more rudder. Surprisingly, it is remarkably easy to land. At first, most of us used the radar altimeter as an aid, but as experience grew, and the "picture" developed, it slowly slipped out of the cross-check. A "grease job" lets the passengers count five gentle, but distinct, touchdowns; aft wheels on the aft trucks, front wheels on the aft trucks, aft wheels on the forward trucks, front wheels on the forward trucks, and finally, the nose wheels. New pilots frequently release pressure on the yoke after feeling two touchdowns; then they discover—the hard way—that the nose wheel was still 15 feet in the air.

One of the best things the Galaxy does is stop. With twenty-four main wheels, each with full modulating anti-skid, the Galaxy comes to a stop rapidly and smoothly. Personally, I have never used the reversers past idle. If you land on the first 2000 feet of a 7000 foot runway, stopping room is ample. The low approach speeds help; a heavy airplane—weighing, say, 650,000 pounds—touches down about 140 indicated and rolls only 2,500 feet with max braking and idle reverse. If you try that in a heavy 707 or DC-8, it is likely that you will end up with flat tires from blowing the fuse plugs. In real life, hardly anyone needs to employ max braking and landing rolls are on the order of 4,000 feet in an average situation.

The Galaxy is a clumsy machine to taxi. Your average airline pilot soon learns to be graceful in flight but it takes some time and much practice to move around a restricted ramp without blowing something over and embarrassing yourself half to death. My senior buddies on the 747 tell me that on their Fatbird, the aft main gear automatically casters in and out of the turns. Not on the C-5. What you really need is three hands. One for the nose wheel, one for the throttles, and one for the caster switch. When the airplane is heavy and the ramps are icy, the problems can rapidly become unmanageable. Great caution, nerves of steel, and those cat-like reflexes that us airline pilots are so famous for, are the order of the day.

One interesting gadget that few of us had seen before on commercial birds is the crosswind

landing gear. A terrific idea. Say you are steaming down final holding 10 degrees of left crab. You tell the copilot to rotate the crosswind switch 10 degrees to the left. What happens next is that all 28 wheels gently rotate 10 degrees right so that they are all nicely lined up with the runway while you and the airplane still have the crab in. It works beautifully, but I still find the crosswind gear psychically confusing. As I enter the flare, my whole sensory, seat-of-pants system is screaming at me to kick it out and stick in some upwind aileron. You don't, of course; you maintain the crab clear through touchdown and soon you are barreling down the runway slightly sideways wondering why everything looks so different. As the machine slows, the copilot takes out the crosswind setting, the big beast wiggles her tail ever so gently and pretty soon things look normal again. And so they are. Now all you have to do is taxi, and with any luck at all, it'll be raining, dark, and the ramp will glisten like glass under the arc lights.

We are approaching Torbay, Newfoundland, so the nav and I go over to Gander and copy our oceanic clearance. As filed to Frankfurt, overhead Torbay, track X-ray to Shannon, maintain 310 and Mach.77. FL 310! Damn. We wanted 350. We argue briefly with Gander but he's adamant. Oh, well. We read back the coordinates of track X-ray and turn offshore doing a measly 510 on the ground speed. At 50 West we sign off with Gander and go to Mac-Dill Airways, the military counterpart of Gander Oceanic Radio. I am immediately reminded of a longterm, minor beef I have with MAC. No SELCAL. So help me, it's the truth. Once a long time ago, we installed SELCAL on several C-124s on a test basis. It worked so well that we immediately removed the equipment from the airplanes and SELCAL hasn't been heard of in MAC in over 15 years. No SELCAL means that somebody gets to listen to the hissing and scratching of the HFs for the next couple of hours. (It's gonna be the copilot because I'm going to bed.)

Behind the flight deck on the right hand side, there are two small rooms with sliding doors. Each room contains three bunks, and they may well be the greatest items ever installed on an airplane since the invention of the relief tube and the Norden bomb sight. I undress, turn off the light, and crawl in for what I hope will be a good solid two hours. Fat chance. I get about an hour and am awakened by the nav. "Problems," he says. I'll say. Frankfurt has crumped and is going to stay crumped. Mildenhall is going down rapidly, is unusable as an alternate, and probably will become unusable, period. Because we got neither the altitude nor

the forecast winds on our crossing, we have burned most of our reserve fuel and will soon start burning holding fuel. The nav is mildly curious about what we'll do and where we'll go. I am always amazed at how, most of the time, these weather diversion decisions make themselves. Germany and the southern UK are out; Madrid is good but fuel is iffy. Could we make it? Maybe. Prestwick has 800-2 and is supposed to hold; Shannon is VFR so we have it made. We'll shoot for Prestwick since we have fuel and maintenance there, and if Prestwick doesn't hold we've got fuel for Shannon.

An hour and ten minutes later we swoop over the beach at Troon and rosy-cheeked Scots are soon pumping us full of fuel and plying us with ham and eggs. Refueled and refreshed and with the Frankfurt forecast looking up, we make our goodbyes. "Thanks for the gas and also the ham and eggs."

"Aye. Haste ye back."

Back in the flight deck my Continental copilot says, "Haste ye back? Is that the same as 'Y'all come back?' "

"Close enough. Before-starting-engines checklist, if you please."

An hour and a half later we are in the midst of the Frankfurt terminal area merry-go-round. Not as bad as O'Hare perhaps, but certainly you want everyone on the flight deck sitting up on the first six inches of the seat and paying attention to what's going on. We break out of a 300 and one situation and land on 25L. Instead of five smooth touchdowns, I get only two and they are firm. But what do you want? I've been up all night and half the day. We will take about twenty hours on the ground here and then nonstop it back to Dover. Not a bad day's work, I reflect as we taxi in. Seventeen hours on duty, an ocean crossing, a weather diversion, and two fairly low weather approaches pulled off the first time around. Not bad for a crew of four different guys from four different airlines.

The reasons for airline pilots staying with a demanding program like the C-5 are as varied as the people you ask. I am in it primarily, I think, to keep my hand in on the stick and throttle. Were I not flying the C-5 I'd have to bid reserve copilot and I do not love reserve. Others are in it for the dough; they are furloughed and awaiting recall. Some cite the pension which can be considerable and others talk about it as an insurance policy against strikes and furloughs. The number of airline pilots who stay with it indicate that the advantages outweigh the disadvantages. But there is another factor, seldom mentioned, which I am convinced is a major factor in our retaining good people. Some of us are constitutionally incapable of walking away from the left seat of the world's biggest airplane.

ABOUT THE AUTHOR

Major Sibbald has roots in two sides of the flying profession. He flys C-5's with the 709 MAS (Assoc) at Dover and also plys the international airways with TWA. He is no stranger to *TMF*, having been a winner in the 1976 MAC Flying Safety Writing Contest.

The Eyes Have It

A visual scan remains the key to collision prevention.

Back in 1976, the FAA commissioned the MITRE Corporation to study and analyze the civilian midair collisions that occurred between January 1964 and December 1971. One of the most prophetic conclusions made in the study was that the greatest threats to air carrier aircraft is the lack of transponder equipment aboard general aviation aircraft in busy traffic areas. During the study period, no midair collisions occurred as long as aircraft in close proximity were identified under positive radar control and conforming to their ATC clearances. The primary civil aviation collision problem to be solved, the study concluded, was the IFR-VFR mix in busy terminal areas where commercial and general aviation aircraft are concentrated.

In the first ten months of 1975, general aviation aircraft were involved in over 87 per cent of the near collision reports received by the FAA. The greatest number of these reports occurred between general aviation and military aircraft.

The Flight Safety Foundation, in reporting the MITRE study, identified the pilot as the most important link in any chain of collision prevention. The fact that an aircraft is on an IFR clearance does not relieve the pilot of his responsibility to *see and avoid*. Many times, small, non-transponder equipped, aircraft don't even show up on the controller's radar.

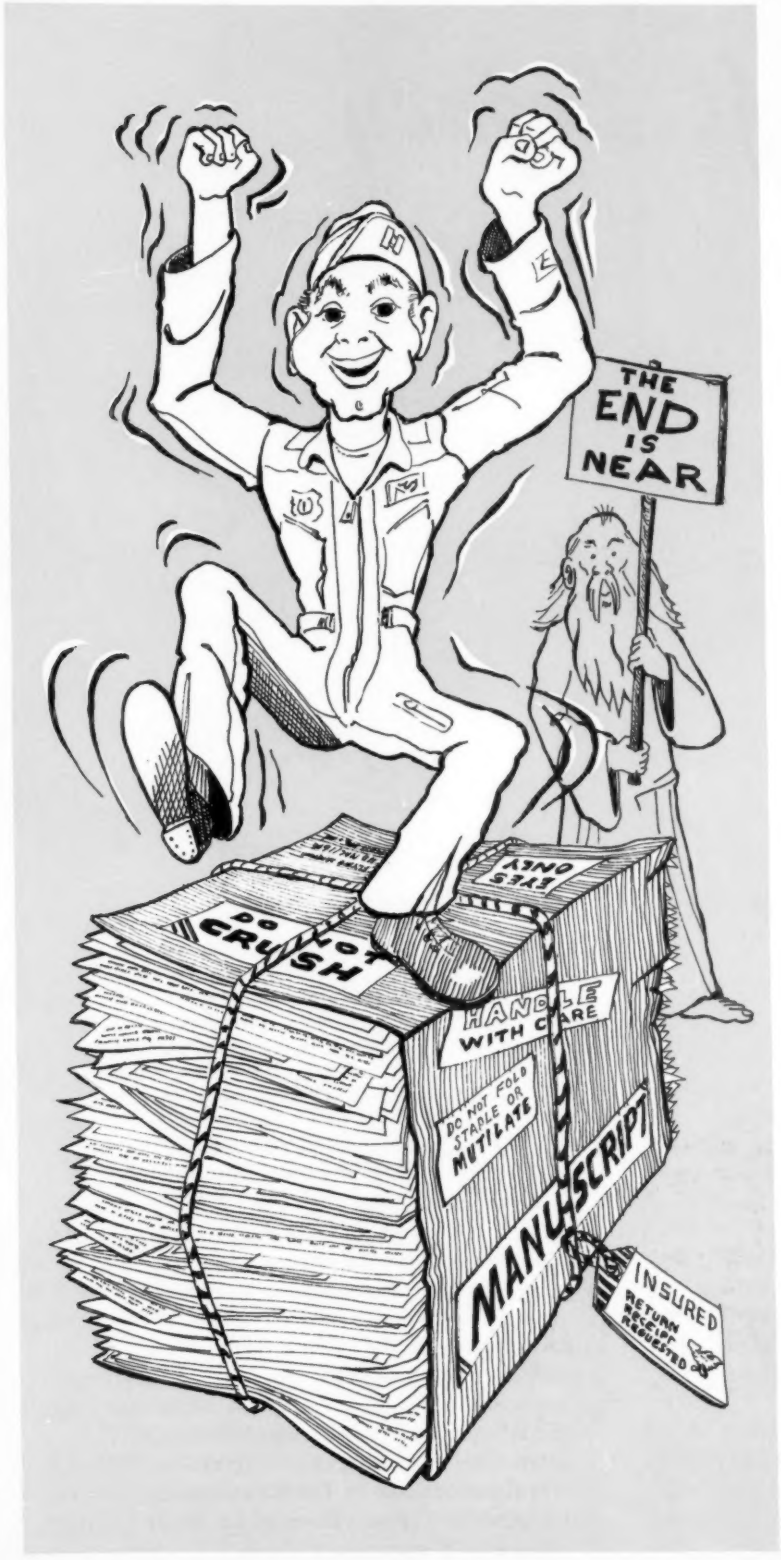
Once another aircraft is seen, the pilot must determine its relative position and course. For example an aircraft that appears to remain stationary on the windscreen is on a collision course. Making a turn so as to cause apparent movement of the approaching aircraft on the windscreen and either climbing or descending as necessary is a proven technique. But once avoidance maneuvers are started, it's important to continue scanning, not only for the conflicting aircraft, but for any other aircraft in the vicinity—especially in a high density terminal area.

—Flight Safety Foundation

I FLY THE LINE

by Capt Bill Sadler
53d WRS
Keesler AFB, Mississippi

I'm the guy who hauled the coal
to the folks in West Berlin,
And when the paratroopers jump,
I'm the one who takes them in.
I've plucked the stricken sailor,
from the fury of the sea,
And when the President needs to fly,
the call goes out for me.
I've hauled supplies to Ecuador,
to ease an earthquake's pain,
I've flown into the evil eye,
of every hurricane.
The fighter jocks who cross the fence,
all know without a doubt,
That when they get in trouble,
I will come to pull them out.
I've hauled Marines to every place,
that sought a helping hand.
I carried tanks and jets to Lod,
when Israel made its stand.
I hauled the wheat to Africa,
to blunt Sahara's drought,
And when the gates of Saigon fell,
I hauled the friendlies out.
I've hauled the sick and wounded,
from every battle zone,
And never rested till I knew,
that every man was home.
I took the winged warriors,
to their planes in Vietnam,
And brought their tiny caskets home,
from Hanoi's Gia Lam.
I've flown the Poles both North and South,
I've flown the desert floor,
I've flown the world from East to West,
in peacetime and in war.
I'll tell you, sir, I've seen it all,
I've been to hell and back,
I'm the guy who does the job,
I fly the line for MAC.



The End Is Near

It's time to package up your prize-winning flying safety story and get it in the mail to the *Flyer*. The 1979 MAC Flying Safety Writing Contest ends 31 March 1979. If your essay arrives after that time, it's too late for a fabulous C.R. Terror T-shirt, a free one-year subscription to the world's finest fly-safe magazine, and a chance to clean up on the wood-grained goodies and get bountiful warm fuzzies from bosses and buddies alike.

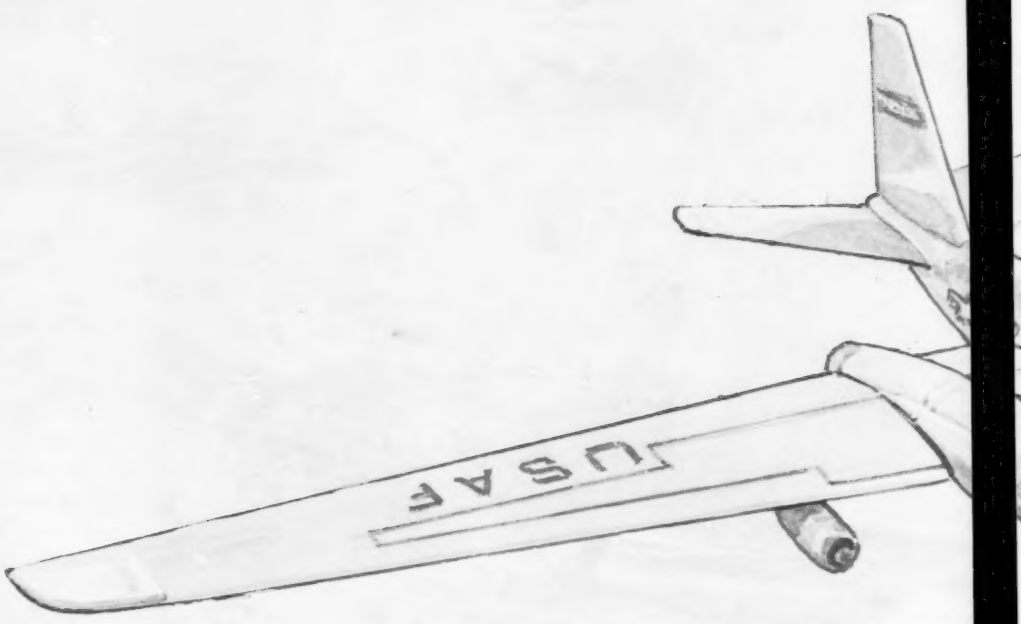
Your entry must be double-spaced, typed on 8 by 10½ inch paper, identified by title only, and submitted in two copies with a cover sheet attached that tells your name, address, T-shirt size and some facts about you.

Any original creation with a flight safety message is acceptable, be it poetry, prose, philosophy, fact or fiction. For most favorable consideration, your entry should be between 1,000 and 3,000 words long (that's 6 to 14 pages of prepared manuscript); poetry may be slightly shorter.

Contest winners will be announced in the July 1979 issue of *The MAC Flyer* along with publication of the first-place winning story. The end is near so rush your entry to:

Flying Safety Writing Contest
HQ MAC/IGFE
Scott AFB IL 62225

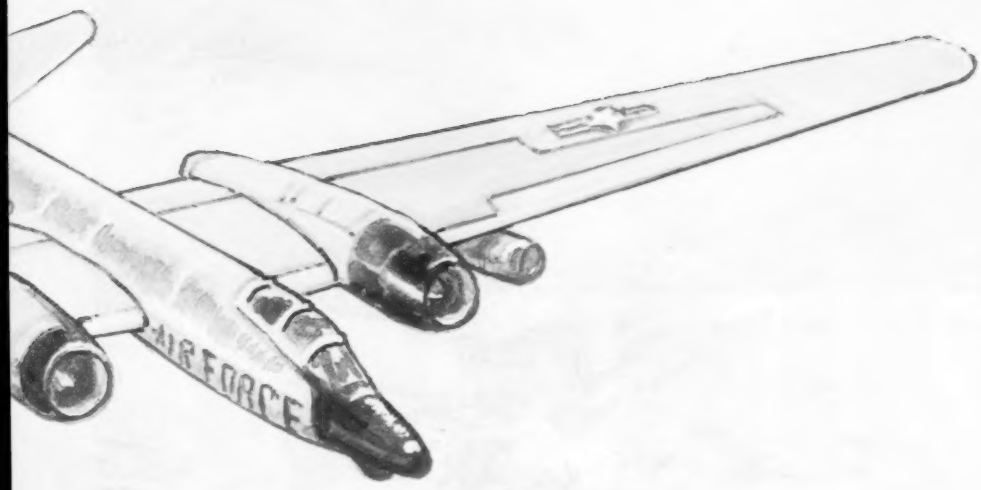
The Airlift Legacy



WB-57F

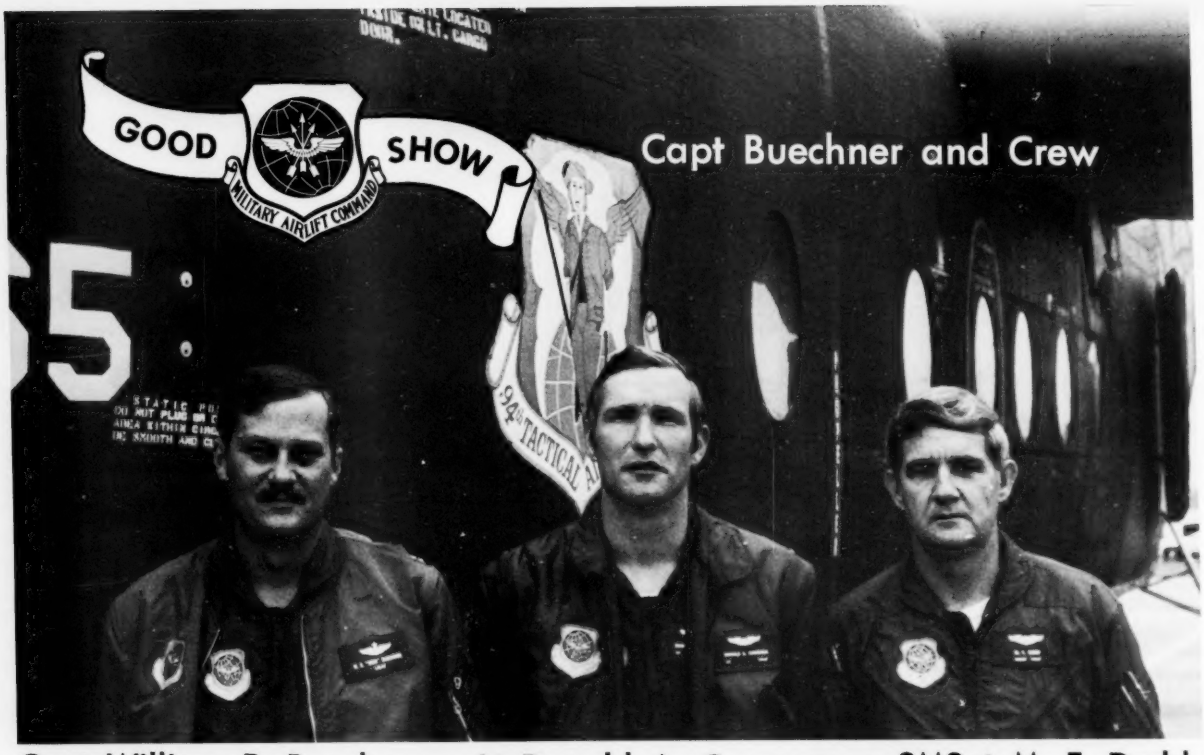
The first RB-57F, later redesignated the WB-57F, was accepted by Air Weather Service (MATS) in March 1964. Born of the requirement for a high altitude radiation sampling aircraft, the WB-57F was a major redesign of the B-57. In fact, about the only parts that were not newly manufactured by General Dynamics were the fueselage center and aft sections, the horizontal tail and the landing gear—everything else was new. Most noticeable in the rebuild was the huge wing which gave it the lift needed to operate above 60,000 feet. The span was almost double that of the standard Canberra. It stretched 122 feet from tip to tip and had an area of 2,000 square feet.

B.GAUSS - 1978



Along with the new wing, a larger vertical tail and rudder were installed to compensate for the asymmetrical thrust which the larger engines produced. Pratt & Whitney TF-33 turbofans were installed in the new wing. Two auxiliary J-60 turbojet engines were installed on removable pods for the extra thrust required on certain missions. A unique flight control system was developed especially for the F model. No flaps were installed. Inboard ailerons were fitted with both fixed and moveable trim tabs on the trailing edges. Large, retractable spoilers, located outboard of the ailerons provided additional lateral control. The wing contained three spars instead of the single spar found in the old B-57. Use of honeycomb construction in the upper and lower panels increased strength and reduced weight so that very few ribs were required in the wing. The nose was enlarged to carry specialized radar equipment. To make room for test and sampling equipment, the fuselage fuel tank was removed and all fuel was carried in the wings. Production of the WB-57F ended in March 1967 with a total of 17 delivered.

Although retired from the Air Force inventory, NASA still operates two of them for high altitude air sampling and to support satellite systems development.



Capt William R. Buechner • Lt Donald A. Cameron • SMSgt M. F. Dodd

Daylight was fading fast over the vast North Atlantic Ocean, when one of the C-7 Caribou's engines began running rough. Capt William R. Buechner and his 908th TAG (Reserve) crew were anxious to find an emergency landing field they could divert to.

Flying on the final and longest leg of the 1978 Reforger deployment, the crew was nearly three hours out of Keflavik, Iceland, on their way to Weisbaden when their troubles began. The Air Force Reserve HC-130H rescue ship flying ahead of Captain Beuchner's Caribou and several other C-7s and C-123s which were accompanying them on the deployment, radioed for information on the nearest landing strip. It turned out to be a small airport at Stornaway, located on a tiny island just off Scotland's rugged North Atlantic coast.

Finding the out of the way airfield was a considerable challenge, but the landing itself was uneventful, since Air Force controllers had already called the airport manager at home in time for him to reopen the field for the unsteady C-7. The rescue crew radioed ahead to Weisbaden, and a reserve maintenance team was set up to fly to Stornaway the next day with a spare engine. The only sour note was a warning from the airport manager that strong winds were predicted.

"We were just beginning to tie the plane down when they began," said Captain Buechner. Before long the winds had increased to 50-knot gales of variable direction that threatened to overturn the Caribou.

"We tried to block the wind with heavy snow removal equipment and other airport machinery," explained Captain Buechner, "but the gusts began hitting 80 knots, and we knew the tie-downs just wouldn't hold. The only thing left to do was to fly it on the ground."

So that is what the Montgomery, Alabama-based reservists did. After starting the airplane's one good engine, they taxied into the wind for the next two hours. Every time the wind changed direction, so did they. The C-7 never left the ground during their "flight", but the constant "weathervane" taxiing kept the plane from cartwheeling over on its wings.

Included on Captain Buechner's intrepid crew were Lt Donald A. Cameron, SMSgt M. F. Dodd, and SSgt Kenneth Menich (Not pictured).

Thanks to Capt Chris Scheer, 14th AF (Reserve), for the facts of this story.—Ed

RHYTHMS OF FLIGHT

by Maj Alan D. York
Associate Editor

Whether we're flying or not, we are limited by a body that stubbornly sticks to its own timetable.

In our infinite cleverness, humans learned many years ago to turn night into day with the flick of a switch. More recently we've actually begun defying the terrestrial rules of time by "slipping the surly bonds" in our airplanes or escaping the earth entirely in space craft. At jet speeds, we routinely cross five or six time zones in a single eight-hour flight. Transiting these realms in such a fashion, however, completely bypasses the age-old schedules of day and night upon which our internal rhythms are patterned.

Over vast stretches of evolutionary time, our species has adapted to the recurring cycles found in nature. The day-night, cold-warm, wet-dry cycles that we perceive are only manifestations of an even more basic cycle —the earth's measured rotation in its orbit around the sun. This "primal clock" has created within us a biological rhythm measured in

24-hour segments. The term circadian rhythm (coined from the Latin words *circa* and *dies,* meaning "about a day") describes our physiological accommodation to the immutable rhythms of the universe.

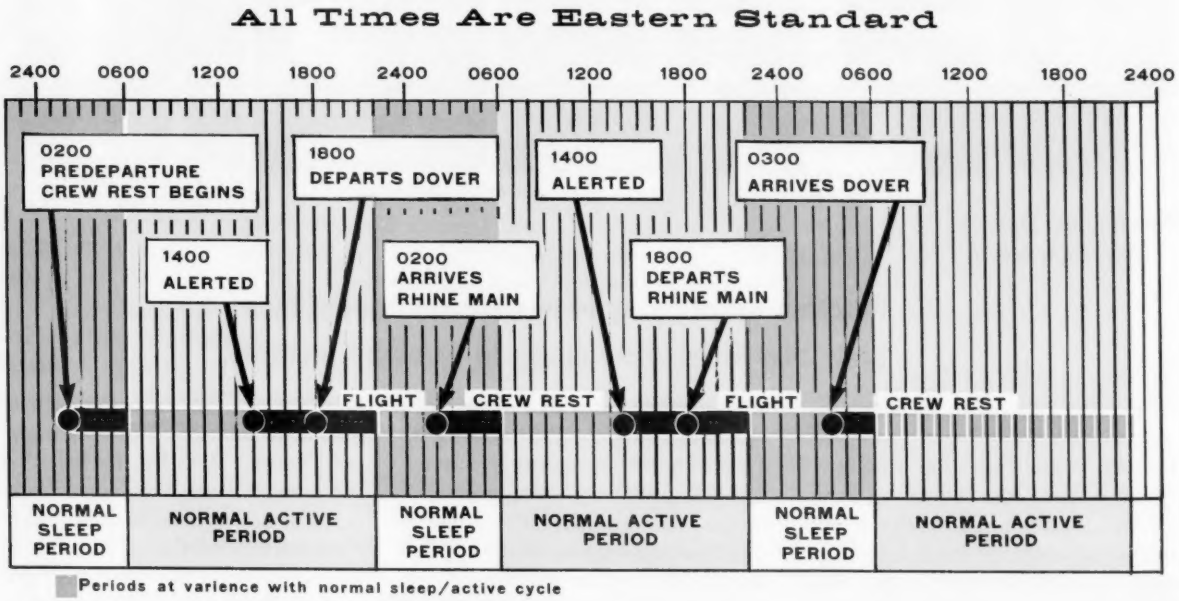
Researchers have identified over 125 separate cycles regulating virtually every body function, each attuned to this circadian rhythm. Glandular secretions, heart rate, blood pressure, temperature, brain waves and the volume of air inhaled are but a few of the functions whose 24-hour cycles determine our physical and psychological vigor during the day and our propensity for sleep at night. These functions seem to reach their peak after midday and ebb after midnight.

The human body is remarkably adaptive and can adjust to reversals or disruptions to the normal circadian rhythms *if given enough time.* Anyone who has gone from a day work schedule to the grave shift however, knows that the first few nights can be rough. We in the flying fraternity recognize that

An aircrew may change work shifts many times during a single mission.

long trips can have the same effect as a constantly changing work schedule. An aircrew can work many different shifts in the course of a single mission. Activities that vary from our normal day-night schedule tend to desynchronize our internal biological clock. After all, you can't change overnight what nature has taken millions of years to establish.

The accompanying diagram represents an airlift mission from Dover AFB, Delaware, to Rhein-Main AB, Germany, and back to Dover with a scheduled crew rest at Rhein-Main. It shows just how much disruption occurs even on a relatively short trip. Our fictional C-5 aircraft commander is Captain Sergio DeSink whose normal sleep cycle at Dover is from 2200 to 0600 EST and normal active period is the 16 hours between 0600 and 2200 EST. The time lines in red represent periods during the mis-



sion which are at variance with his normal sleep-active cycle back home. Total time from predeparture crew rest to final block-in back at Dover is 49 hours. Twenty-one of these hours are spent in activities at variance with his normal sleep-active schedule. (Short periods of sleep on board the aircraft could reduce this non-synchronous time.) During the entire 49-hour mission, only two separate four-hour periods are spent in crew rest during normal sleep time; from 0200 to 0600 EST during predeparture crew rest and from 0200 to 0600 EST during crew rest at Rhein-Main (local time in Germany is 0800 to 1200). The mission terminates back at Dover at 0300 EST—three hours before his normal active period begins. During the approach and landing Captain DeSink's normal circadian rhythm is at a low ebb, his sleep pattern is completely reversed and the weather is at minimums. Fortunately, his adrenal glands come to his aid as he listens to approach control calling for rainshowers and a decreasing RVR. This additional adrenalin temporarily forestalls any big slump during this most critical phase of flight.

As Capt DeSink steps lightly on the brakes and stops gently in the blocks, he is faced with another problem: should he go to bed immediately or wait until his normal sleep cycle begins 19 hours later in an attempt to get back on his normal schedule. Could he—or would he want to—stay awake until 2200 that night?

Besides sleep and circadian rhythm disruption, the physical flight environment can influence how we feel during a mission. High cabin altitudes, diet changes, low humidity, increased ozone levels, vibrations, noise and glare all can affect our well being.

Here are some suggestions supported by current research or based on the experience of those of us that have flown the long-haul line. You might try one or more of them on your next trip and see if they help.

- Drink a great deal of water. This helps maintain proper fluid balance and counters the effects of dehydration from extremely low cockpit humidity and the consumption of coffee and tea.
- Reduce the intake of coffee or tea. These cause the body to eliminate more fluids than normal and upset its chemical balance.

During the approach and landing, the pilot's normal body rhythm is at a low ebb.

- Watch the kinds of foods you eat during a flight. Some foods like beef and milk contain compounds called biogenic amines which can cause drowsiness. Limit them or try lighter foods and juice.
- The consumption of heavy meals before or during flights causes the blood to go to the stomach for digestion and lessens the amount available to the brain. Again, frequent light snacks can help.
- Raise your feet as much as possible during the flight. Long term seated posture tends to pool blood in the legs.
- Rest periods using a bunk bed can help the blood pooling problem and combat a sleepy, fatigued feeling.
- Cigarette smoking reduces the blood's oxygen carrying capability. A heavy smoker can deprive his brain of vitally needed oxygen. (I can't help recalling the words of one AC during his crew briefing: "I don't mind if you smoke during the flight. All I ask is that you do it outside.")
- Occasional use of supplemental oxygen can help restore the blood's oxygen balance. Navigators report that several whiffs of 100 percent oxygen can dramatically improve night vision for shooting celestial.

While these suggestions are not offered as a panacea and obviously won't eliminate all the problems associated with our profession, one or more of them may help you through your next long flight. And perhaps as you're riding along on the crew bus afterward, looking none the worse for wear, you'll be able to say to the worn out new guy on the crew what a crusty old AC said to me after my first C-5 trip, "Son, you gotta be tough to fly the heavies."

*Deja Vu**

*(day-zha-voo), [Fr. lit., already seen], the illusion that one has previously had a given experience.

Ramstein AB, Germany
(Elevation 782 feet)

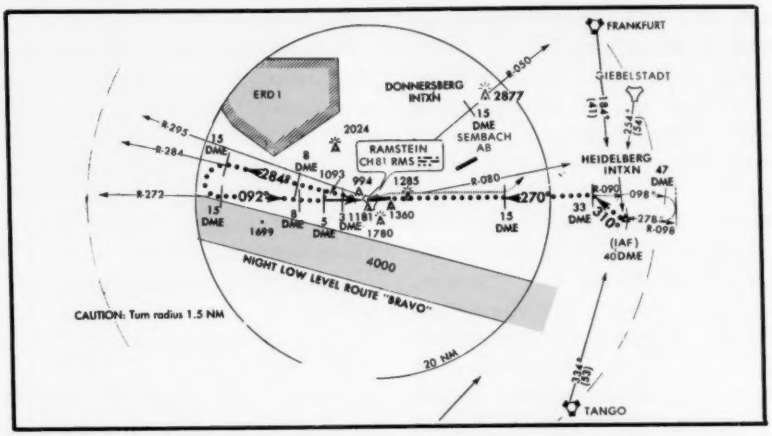
Ramstein AB is nestled among wooded hills five miles west of Kaiserslautern. The base is the home of MAC's 322 Air Division and Headquarters USAFE.

The terrain doesn't present a major hazard, but congested airspace does. The tallest thing within 25 miles is a tower 17 miles to the northeast that rises to 2,877 feet MSL. There are two restricted areas near the field that are used for Army training and combat air tactics maneuvering. Night low level route "Bravo" passes less than ten miles south of the runway. Extensive helicopter training is conducted less than a mile south of the field. To go along with the busy air traffic are some noise abatement and arrival procedures outlined in FLIP that are bound to keep you occupied.

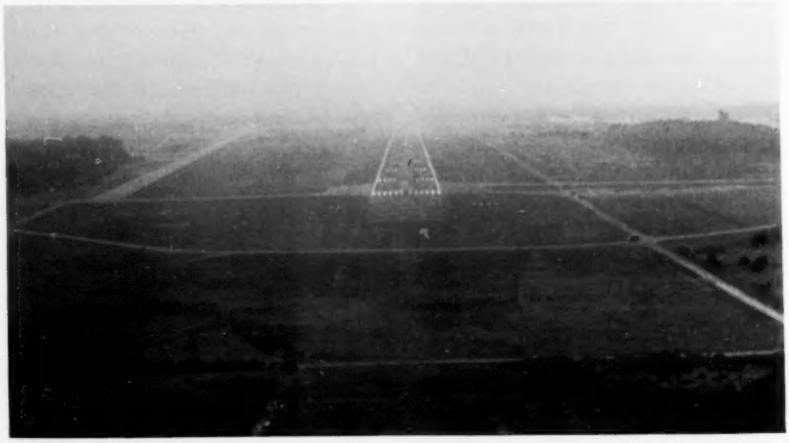
Ramstein's runway (09/27) is 8,031 feet long with taxiways on both sides. Landing either direction you'll notice NATO standard approach lights, runway end identifier lights, VASI and high intensity runway lights. The aerial port parking area presents a severe FOD hazard and crews should be careful to use minimum forward thrust, no reverse, and shut down the outboard engines (if practical) while taxiing there. The main parking area north of the runway is smallish by MAC standards, and can quickly become crowded with big airplanes.

See and avoid is the watchword around Ramstein.

—Adapted from ISD-Q6-417



Restricted area ERD-1 is to the northwest; Bravo night low level route is south.



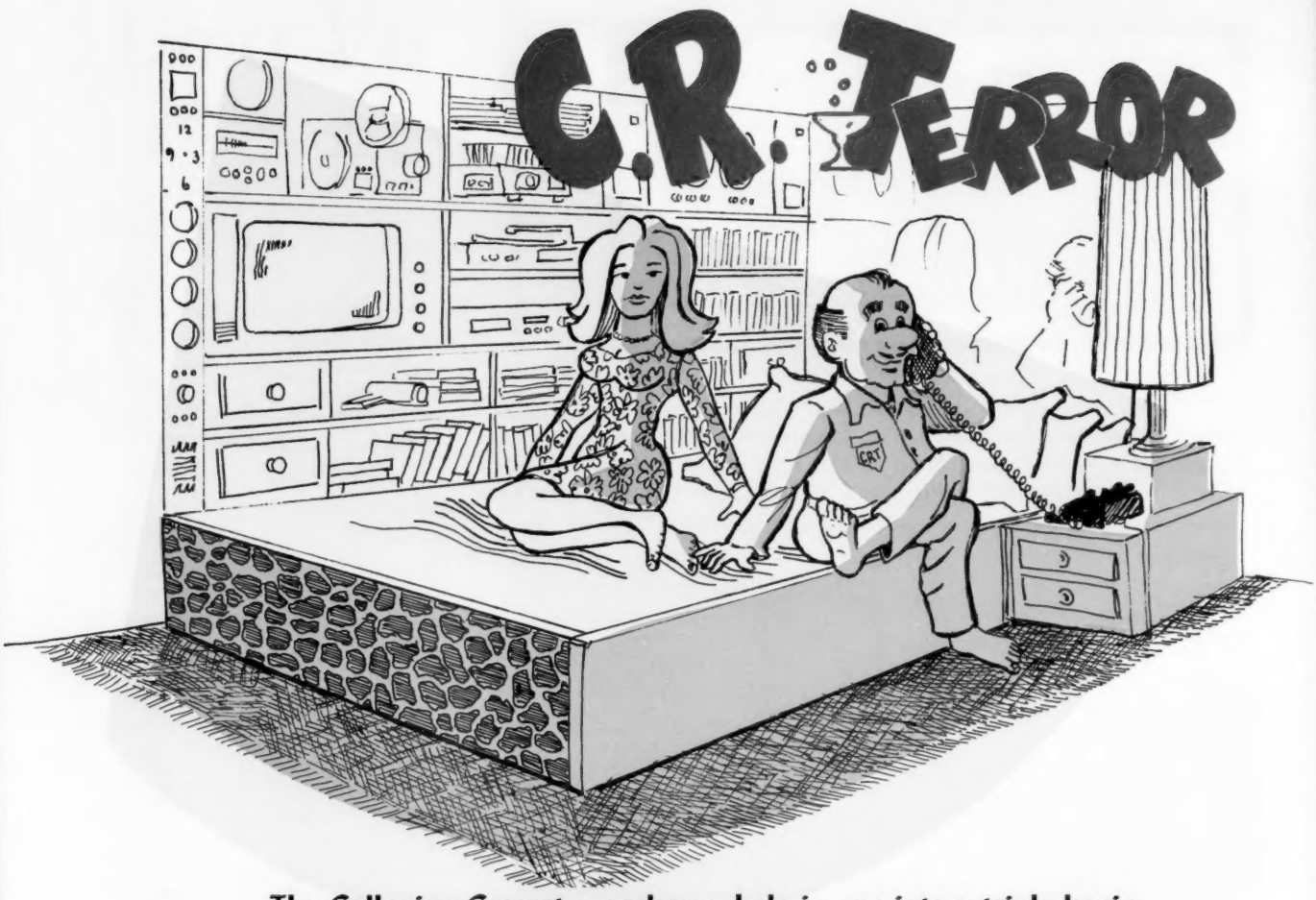
On short final to runway 27, notice the road crossing close to the overrun.

Final to 09, helicopter training area is to the right within one mile.

The Viewer's GUIDE

Here's a handy update on last year's list of Airport Qualification Programs. They are available to any Air Force unit and many are on the shelves at your local MAC learning center. You may order programs through the base audiovisual library or the Air Force Audiovisual Library, Norton AFB. Programs that have been featured in the *Flyer's* "Deja Vu" are shown in bold print.

Place	*Program No.*	*TMF Issue*
A-306, Chun Chon, Korea	ISD-Q7-1311	
Adak NAS, AK	ISD-Q7-1056	
Alameda NAS, CA	ISD-Q6-723	
Alice Springs Aprt, Australia	ISD-QT-841	
Altus AFB, OK	ISD-Q6-461	
Amberley RAAFB, Australia	ISD-QT-842	
Andersen AFB, Guam	**ISD-Q6-473**	**Nov 77**
Andrews AFB, MD	ISD-Q6-458	
Ascension Island (AF Aux)	**ISD-Q6-442**	**Oct 77**
Ascuncion, Paraguay (Pres Stroessner Aprt)	ISD-Q6-448	
Barbers Point NAS, HI	ISD-Q6-346	
Beale AFB, CA	ISD-Q6-348	
Bergstrom AFB, TX	ISD-Q6-819	
Buckley ANGB, CO	ISD-Q6-597	
Cagayan de Oro, Philippines	ISD-Q8-1397	
Cape Newenham AFS, AK	ISD-Q7-911	
Cape Romanzof AFS, AK	ISD-Q7-912	
Charleston AFB, SC	ISD-Q6-449	
Cheju, Korea	ISDP-Q8-1405	
Christchurch IAP, New Zealand	ISD-Q6-479	
Cubi Point NAS, Philippines	**ISD-Q6-353**	**Aug 78**
Dakar/Yoff, Senegal	ISD-Q6-441	
Dover AFB, DE	ISD-Q6-450	
Dyess AFB, TX	ISD-Q6-456	
Eielson AFB, AK	ISD-Q6-466	
Fort Campbell AAF, KY	ISD-Q6-460	
Fukuoka AB, Japan	ISD-Q6-363	
General Lyman Fld, HI	**ISD-Q6-356**	**Jul 77**
George AFB, CA	ISD-Q5-060	
Gray AAF, TX	**ISD-Q6-459**	**Feb 78**
Guantanamo Bay NAS, Cuba	**ISD-Q6-357**	**Dec 77**
Hickam AFB, HI	ISD-Q6-360	
Hill AFB, UT	**ISD-Q6-454**	**Apr 78**
Howard AFB, CZ	**ISD-Q6-362**	**Mar 78**
Indian Mountain AFB, AK	**ISD-Q7-914**	**Aug 77**
Iwakuni MCAS, Japan	**ISD-Q6-496**	**Sep 78**
Johannesburg, South Africa (Jan Smuts Aprt)	ISD-Q6-437	
Kadena AB, Okinawa, Japan	ISD-Q7-905	
Kaneohe Bay MCAS, HI	ISD-Q6-365	
Kangnung, Korea	ISD-Q8-1404	
Keesler AFB, MS	ISD-Q7-904	
Kimhae IAP, Korea	ISD-Q7-1313	
Kirtland AFB, NM	**ISD-Q6-366**	**Feb 79**
Kunsan AB, Korea	ISD-Q6-471	
Kwang Ju, Korea	ISD-Q7-1309	
Lakenheath, RAF, U.K.	ISD-Q8-1544	
La Paz, Bolivia (J. F. Kennedy IAP)	**ISD-Q6-364**	**Jan 78**
Learmonth Aprt, Australia	ISD-QT-840	
Little Rock AFB, AR	ISD-Q6-457	
March AFB, CA	ISD-Q5-059	
Mather AFB, CA	ISD-Q6-369	
McChord AFB, WA	**ISD-Q6-453**	**Jul 78**
McClellan AFB, CA	ISD-Q6-370	
McGuire AFB, NJ	ISD-Q6-451	
Montevideo, Uruguay (Carrasco IAP)	ISD-Q6-447	
Norfolk NAS, VA	**ISD-Q6-462**	**Jun 77**
Norton AFB, CA	**ISD-Q5-047**	**May 78**
Offutt AFB, NE	ISD-Q88-1500	
Ohakea RNZAFB, New Zealand	ISD-QT-843	
Osan AB, Korea	ISD-Q6-470	
Pago Pago Aprt, American Samoa	**ISD-Q6-476**	**May 77**
Pease AFB, NH	ISD-Q8-1501	
Perth IAP, Australia	ISD-QT-839	
Peterson AFB, CO	ISD-Q6-598	
Pope AFB, NC	ISD-Q6-455	
Quito, Ecuador (Mariscal Sucre Aprt)	ISD-Q7-918	
R-404, Yang-Gu, Korea	ISD-Q7-1314	
Ramstein AB, Germany	**ISD-Q6-417**	**Mar 79**
Richmond RAAFB, Australia	ISD-Q6-477	
Santiago, Chile (Pudahuel IAP)	ISD-Q6-445	
Scott AFB, IL	ISD-Q6-599	
Seneca AAF, NY	ISD-Q7-916	
Shemya AFB, AK	ISD-Q6-465	
Sondrestrom AB, Greenland	**ISD-Q6-377**	**Sep 77**
Sparrevohn AFS, AK	**ISD-Q7-913**	**Oct 78**
Taegu AB, Korea	**ISD-Q7-906**	**Dec 78**
Tatalina AFS, AK	ISD-Q7-960	
Tegucigalpa, Honduras (Toncontin IAP)	ISD-Q7-917	
Travis AFB, CA	ISD-Q6-452	
Wainwright AAF, AK	**ISD-Q7-910**	**Jan 79**
Yokota AB, Japan	**ISD-Q6-467**	**Nov 78**



The Galloping Gamester parlays a hole-in-one into a triple bogie.

"Scuze un momento, my pet, while I catch the telephono," said the Roger Ramjet of Romance as he disengaged himself from Tassels and moved across the room toward the insistently ringing interrupter. "It's your nickel, start talking," he quipped into the receiver of his bright red Terrorphone.

His jocularity suddenly turned to gloom, however, when the rescue duty officer at the other end of the line relayed the news that he was needed ASAP for a special search mission. Normally, the Rotund Rotorhead would have been safe from an unscheduled alert because of the limitations on drinking before flying. Unfortunately, the bottle-throttle rule couldn't save him this time because he hadn't even got around to breaking out the Chateau du Bathtub, vintage 1975, he had planned on plying Tassels with.

"Ah, well, so much for the best laid plans of mice and me," he moaned. Pulling on his green bag, the portly packrat stuffed its pockets with a place setting of plastic dinnerware, a folding can opener, and a strange assortment of snacks and other items intended to stand him in good stead in the event of just about any disaster. Tassels watched woefully from her observation post on the edge of C.R.'s Wonderiffic Waterbed and Entertainment Center.

"Be good, m'dear, and I shall return shortly," soothed the Overly Optimistic Autorotator as he gave his pulchritudinous playmate a peck and bounded out the door of his condo.

Three Jolly Green crews, including his, were already assembled in the briefing room when C.R. arrived at the squadron, and

the minute he was seated, the rescue coordination officer started explaining the mission. The object of the search turned out to be a light plane that was reported down about an hour's flying time from the base. "You and your crew will be covering Yankee and Alpha, Major Terror," announced the briefer with a tap of his pointer for emphasis on two areas outlined in grease pencil on the map. "This may be a long search," he warned, "because the terrain is rough, and we have only the route of flight from the pilot's flight plan and his last radio call to the flight service station to determine the most probable location of the airplane. Be sure to take on plenty of fuel . . . and be careful. If there are no questions, that is all I have. Good luck!"

"You're new in the outfit, aren't you, Lieutenant Filberto?" inquired C.R. as he joined his tall, swarthy young copilot at base ops, quickly adding as an afterthought, "What do you like to be called?"

"Yes, sir, I am new here, and my friends call me by my first name, which is pronounced 'Hey-Soos' even though it's spelled the same as Jesus," answered the handsome Hispanic.

"Well, fine, Lieutenant," replied C.R., "and about that 'sir' stuff, 'boss' will do just fine. That's what the rest of the crew calls me . . . most of the time. Heh, heh."

"Yes, sir—I mean, boss," came the hesitant acknowledgement.

"Now that we've got the amenities out of the way, let's see where those search areas are that we're supposed to cover," mumbled the Flakey Flight Planner, whistling and tracing his index finger uselessly across the well-smudged base ops wall chart.

"I've got them marked on this TPC I fixed up while I was waiting for you after the briefing, sir . . . I mean, boss. We'll be covering the places marked Yankee and Alpha," explained the lieutenant.

"Aha, looks like they're pretty close to the Laurel VOR," observed C.R. "We'll just file straight up Victor 133 and—"

"Can't do that, boss; I checked notams and Laurel VOR is off the air until next week. We'll have to make a dogleg out Victor 384 to Cumquat Intersection and then go the rest of the way on Victor 740 using the Hardyville vortac for course guidance. MEA's on that route are much lower anyway," concluded the competent new copilot.

Recalling some of the new assistants he had flown with, C.R. was nearly bowled over with the obvious winner he had drawn for this mission. "You may be new in the squadron, but you're no neophyte when it comes to the rudiments of the flying game. What gives?" probed the Paunchus Pilot.

"Well, I did have a little collective and cyclic experience before I signed on to fly for Uncle Sam," admitted Filberto—neglecting to add that his father had run a large flying service and an airport in Arizona. "But I've got a lot to learn," he went on, "and I understand you have more experience than anybody else in the squadron."

Wondering if he was being put on, but enjoying the lieutenant's smooth flattery too much to keep his defenses up, the World's Greatest Aviator merely shot back in his best mock modesty, "I'm not known as the Y. A. Tittle of helicopter drivers for nothing, Hey-Soos, but enough of this small talk—we've got ourselves a mission to fly."

It was nearly a perfect night for a search. Cruising at 500 feet, with a full moon and unusually clear skies, visibility was almost as good as if it were daytime. Filberto was the first to break the silence as they gyrated along.

"I was wondering something, boss; how come we didn't top off the fuel tanks before we left? We had plenty of time."

"Not to worry, m'lad. They were three-quarters full, and we would have just burned up that quarter tank carrying it. Besides, the way I fly this green machine, I get fantastic mileage."

"Okay, boss," concurred the skeptical co-skipper, adding, "by the way, we're just about at Cumquat Intersection."

"Great! Call center and tell 'em we'd like to go direct from here.

There are a couple of things I want to show you before we get to the search area."

They were ginning along down a wide valley when C.R. suddenly thrust a pudgy digit at the windshield, waggled it, and announced, "Look out there at our altitude, Hey-Soos; see those high tension cables catching the moonlight? I'm pulling up slightly now and we'll just clear 'em nicely. Gotta watch out all the time for wires when you're flying low like this."

"Amen, boss, that was close all right," said the lieutenant as they passed by the deadly strands stretching across the valley. "Good thing they were spread apart pretty wide or we wouldn't have made it between them."

"What do you mean?" inquired C.R. suspiciously.

"There were some more wires higher than the ones you flew over, boss; didn't you see them too?"

"Of course I did, m'boy," bluffed the abashed aviator. "I just wanted to be sure *you* did! Heh, heh."

The rest of the way to the search site, C.R. was somewhat subdued, but when they began combing the hilly terrain for evidence of wreckage or a survivor, his normal bluster returned.

"Pilot, scanner," called Sergeant Perusal on interphone. "I've got a possible target at ten o'clock. Airman Esthenicks and I both saw something flash down there as we went over."

"Rog. Let's go down and take a look," acknowledged C.R. as he hauled up on the collective, swung around, and dived the Jolly toward the area of the sighting. He settled the chopper, much more gently than anyone expected, on the side of a gently sloping hill. "I'll keep this monster idling while you and Cal go have a looksee," advised the Aviator with Avoirdupois.

While they waited, C.R. seized the opportunity to set up another bit of copilot OJT. "I suppose you noticed that we're parked on this hill with one side of our bird lower than the other," he opened.

"Yes, I did, boss . . . why?" puzzled Filberto.

"Well, there's a little phenomenon known in rotorhead circles as dynamic rollover, and we're in a perfect postion for me to show you how to handle it just as soon as our trusty searchers return," pontificated the puffy pilot.

"Here's our flash, Maj," announced Sergeant Perusal as he thrust a dripping sheet of crumpled plastic between the two pilots. "This little beauty trapped a small pool of water and it acted just like a signal mirror when the bright moonlight bounced off it."

"Button things up then, and let's press," said C.R., forgetting about his intended rollover lesson and increasing the rotor speed in anticipation of a liftoff. As he pulled up the collective, the Jolly lifted a little on one side, then shuddered as it tried to overcome the inertia of the upslope landing gear. Intent on taking off, C.R. ignored the warnings until it was almost too late. One millisecond before disaster, Lieutenant Filberto's left arm came down forcefully on the collective pitch lever, bottoming it out.

"What do you mean grabbing the controls like that, Lieutenant?" barked the irate C.R. as the chopper settled back down on the slope.

"No offense, boss, but in about half an instant more this chopper would have been playing 'dead bug,'" explained the facile flingwinger.

"Well, ahem, ahem, I knew *that* . . . as I said earlier, I intended to show you something about dynamic rollover; but we'll just get on with the search for now," blustered C.R. gruffly as his composure returned.

"One thing, boss," interjected the cautious copilot, "we'd better keep an eye on the fuel; we're already down to less than half full on the gauges."

"You let me worry about the gas," said the overconfident autorotator as he eased the Jolly into a hover and charged off down the valley.

Several box canyons and blind alleys later, C.R. and his crew were still empty handed. Coming into a wide, tree-filled valley surrounded by high hills, they noticed a dark slash in the foliage below and caught a glimpse of something at the end of it glistening in the moonlight.

"There's no place to set down," observed C.R., "so I'll just hover while our intrepid PJ drops down on the penetrator and checks things out."

Sergeant Perusal was lowering Airman Esthenicks toward the ground when the insistent instructor decided it was time to lay another flying lesson on his left-seater. "I don't know if you realize it or not," he began, "but this is a perfect situation for experiencing spatial disorientation . . .

the way the valley slopes up into the hills eliminates all your normal horizon references."

"I did read about that someplace, once," commented Filberto, "but this is the first time I ever saw it demonstrated."

"Whaddaya mean?" asked C.R., puzzled and annoyed at the same time.

"Well, I assumed you weren't dragging the penetrator through the trees just for the fun of it," explained the lieutenant as diplomatically as he could.

"Absolutely, absolutely," muttered the dumbfounded Jolly gyrator, adding, "You take the controls for a few minutes . . . so you can get some experience with this technique."

"Whatever you say, boss," quipped the lieutenant as he returned the Green Giant to its former location over the PJ.

Suddenly Airman Esthenicks came up excitedly on his emergency radio, "We have a light aircraft down here all right," he related breathlessly, adding, "and I found the pilot, too. He's dazed and scratched up a bit, and his arm may be broken, but he can be moved okay."

"Get him on the penetrator and let's get going then," said C.R.

"I know you said not to worry about it, boss," interjected the concerned copilot as they waited for the hoist to reel up their precious catch, "but I can't help being bothered by the fact that we are now down to less than an hour's fuel."

"Spare yourself an ulcer, m'lad," beamed the King of Conservation. "As soon as we have the object of our search safely on board, I will demonstrate the masterfully manipulative flying techniques that have brought me through many a tight tussle with the gremlins of aerospace. Besides, these machines have a built-in margin of safety—there's always more gas in the tanks than shows on the gauges, so don't worry."

By the time C.R. and company had picked their way back out of the hills it was obvious that making an RTB was going to be a photo finish race with the petrol pointer. At the VOR a couple of miles from the field, it looked like C.R. might just pull it off. But with the rotating beacon of the base control tower in full view there was a sickening series of coughs followed by comparative silence as the last of the JP-4 was sucked through the engines.

"Hang on, everybody," warned C.R. "This will be a hard landing. I'm going to try and autorotate over to that open area at our two o'clock position."

The open area in question turned out to be the seventh green of the base golf course, and it was within walking distance of the wing commander's house. Before the blades had even stopped whirling, the old man himself was out to see the first helo to make a hole in one and find out what was going on. "I suppose, Terror, that you'll have a good explanation for this triple-bogied landing," he growled when he recognized who was at the controls. With more restraint than the Doleful Duffer thought possible, the ruffled eagle added, "But you can save it 'till bright 'n early tomorrow when you and your squadron commander drop by my office for a little chat . . ."

Quick Stoppers

Hot Seat

As the Starlifter taxied out for takeoff the loadmaster spotted sparks coming from the seat of a quarter-ton truck. The AC stopped the plane and ordered evacuation of the troops on board. By the time the soldiers were off the 141, flames erupted from the truck. The loadmaster put out the fire with an aircraft fire extinguisher. His quick action avoided damage to the cargo compartment.

The truck's battery cover had grounded against the metal seat frame and started the sparking which led to the fire.

Blind Man's Bluff

"What's it hurt if you leave the radar on, while on the ground?" That sounds like a pretty good evaluative question. Good answers might be: it puts extra wear and tear on the equipment, wastes energy, makes you sterile. Well, it's hard to tell about that, but there is another danger that you might not have considered, as this story shows.

A pilot started seeing double images—when cold sober—rather like the ghosts sometimes seen on a TV picture tube. It only worried him a little until one day he saw seven runways; that sent him to the doctor in a hurry. Several doctors and an ophthalmologist later, he was told that he had developed cataracts and had retina damage. They said it looked like it might have been caused by radiation. At that point the flyer recalled two instances when he had stood in front of a DC-9 with his hand on the radome for as long as 20 minutes. After returning to the cockpit, he had noticed that the takeoff data card partially covered the radar scope, blocking out the fact that the radar was still on. Of course, nobody knows who forgot the radar, but if the checklist had been strictly followed, the radar would have been off.

The Flight Safety Foundation has learned of similar instances of eye damage from radar radiation. In these cases investigators found that the crewmembers were exposed to radiation from aircraft which have their antenna fairly close to the ground, such as C-9s, C-130s, CT-39s, C-141s and many civilian models. The real moral to this story is an old one: use the checklist—it's there to help protect you from yourself.

Ice and Snow No-Go

It will be a while before all of MAC's routes experience spring's big thaw, so here's a story about a hapless civilian pilot who didn't respect Ol' Man Winter's snow and ice. The flyer and airport manager checked over the Cessna and noted ¼ to ½ inch of ice and snow on the wings and tail. The pilot asked, "Will it fly with all that ice and snow on it?"

"No!" the manager emphatically replied. Nevertheless, the engine was preheated, started and allowed to warm up for about 15 minutes. Then two passengers were boarded and the small tail-dragger taxied out.

The ice-laden airplane used 3,000 feet of a 5,000-foot runway to struggle off the ground. When the pilot retarded the power after takeoff, the plane started to bobble and rock. It then started a right spin from 100 feet AGL, completing one turn before the impact that killed all aboard.

In their report, the NTSB noted that such airframe-ice accidents happened 183 times during the five years from 1973 through 1977. The lesson has been repeated enough—ice, snow or frost on the lifting surfaces prior to takeoff is a no-go item.

Cannibalization Can Cook Your Goose

Cannibalization can be just about as unsavory an experience for airplanes as it is for humans. In theory, the idea of borrowing parts from one aircraft that is out of commission and using them as replacements on another bird of the same make sounds like a reasonable way to keep 'em flying when parts are in short supply. Experience has proven that this practice is fraught with peril, however. For one thing, each act of cannibalization requires two separate maintenance routines, and that doubles the manhours involved as well as the odds that an error will occur during removal, installation, or replacement of the cannibalized parts. There are occasions when swapping components is the most practical way to keep the best airplanes on flying status, but extreme caution should be exercised by everybody involved, including the aircrews, whenever "canning" is practiced.

A Navy incident reveals what can happen when it isn't. While en route on an instrument training flight, a Navy A-4L lost all electrical power. The pilot deployed the RAT but could regain only AC power. All DC-run instruments and equipment were still inop. Fortunately, weather was VMC and the pilot was able to DR his way back to home base for an uneventful safe landing.

Investigators turned up a sheared main generator drive shaft as the culprit in the initial power loss, but they also found that the DC failure persisted because there were no fuses in the circuit between the RAT and the DC converter. Further detective work revealed that the missing fuses had been borrowed during a previous cannibalization action—and that no paperwork had even been filled out to document the removal!

Qs

Tied Up Tires

Two recent Hercules incidents illustrate the importance of a careful preflight, even in the darkest depths of the wheel wells.

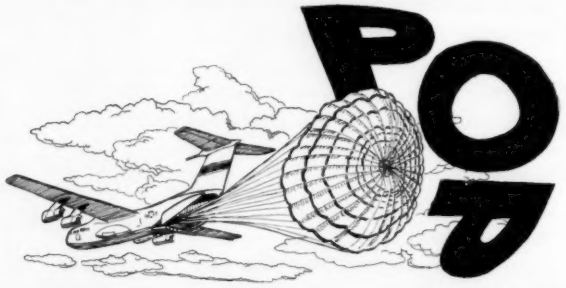
In the first case, when the right-seater placed the gear handle down the left main gear indicated it was not down and locked. The loadmaster checked the gear, confirmed that it was not locked and spotted a rag lodged in the left aft jackscrew assembly. He took out the inspection window, and with considerable difficulty, removed the rag. The gear was then lowered successfully.

The second incident sounds like an instant replay. The C-130's left main gear didn't fully extend during a formation recovery. This crew also discovered a rag jammed in the jackscrew assembly, but their attempt to remove the rag was unsuccessful. After several futile tries to get the gear down using hydraulic power, the crew used emergency procedures and manually lowered the wheels. As an additional precaution, they chained the gear down.

Both "eventful" flights ended with "uneventful" landings.

What a Drag!

Drag chutes are not a normal part of the 781 equipment on a C-141, but a Starlifter on an airborne extraction mission got to try one out by accident while approaching the drop zone. Everything was ginning along nicely as the crew began the slowdown checklist. But during the door-opening sequence, just as the ramp was moving into the airdrop position, the extraction chute prematurely fell out of its holder and landed on top of the petal doors. By this time the petals had parted about three inches and were still opening. The loadmaster made a hasty attempt to notify the pilots in time to get the door-opening sequence halted, but even with the pallet honcho's promptness and a quick response from the flight deck, the petal doors still managed to open a couple of feet—which was wide enough for the wayward extraction chute pack to press on through and deploy. Advising the pilots the chute was in full blossom outside the aircraft, the loadmaster rapidly applied emergency aft restraints to the payload. Since the parachute extraction line was now whipping around between the partly parted petals and causing damage, the loadmaster cut it free just aft of the three-point connector. With the parachute gone, the doors were closed and indicated locked, and an uneventful return home was made. Only minor damage to the doors was incurred, but a suitable number of gray hairs was no doubt added to the pompadours of the crewmembers. A tip of the *TMF* flight cap goes to the quick-thinking loadmaster who was able to minimize what could have compounded into a real mess.



Notable Quote

No one gets ready for an emergency in a moment. What a person does in an emergency is determined by what he had been doing regularly for a long time.

—U.K.'s National Safety Council

After Deadline

ATTENTION MAC/ATC EXCHANGE PILOTS--While temporarily away from MAC on your ATC exchange tour, you can keep in touch by reading The MAC Flyer. It will help you stay up-to-date on the latest happenings in the "real world."

If you're having trouble finding the Flyer, contact the fly-safe office at your ATC base. TMF is distributed from Randolph to all ATC unit safety offices. In fact, ATC is our biggest single subscriber outside MAC.

DEJA VU DEVIATION. The middle photo in last month's Deja Vu is that of runway 17 at Kirtland and not 26 as captioned. The approach pictured to runway 17 is over a residential area.

WORLDWIDE WEATHER EXPERIMENT. MAC people from the Air Weather Service and Aerospace Rescue and Recovery Service are taking part in what the United Nation's World Meteorological Organization calls, "the largest international scientific experiment ever held." More than 140 nations, during a one-year period, will gather weather information from around the world along and below the equator in an attempt to create a model means of measuring forecasts.

MAC is providing weather specialists and crews aboard specially equipped C-141 Starlifters to fly the Pacific routes and WC-135s for the Atlantic route. The area to be monitored over the Indian Ocean is flown by NOAA aircraft.

FOD IS MURDER on our airplanes, and it appears to be on the rise. Mishaps from FOD in 1978 cost us in MAC $782,000--almost a $300,000 increase over 1977. Over 50% of those incidents remain unexplained, but most of the rest resulted from obvious negligence like tools and coins lost in engines, rags sucked into intakes, etc. CINCMAC views this kind of loss as a needless and unacceptable waste of valuable resources, and is looking for increased sensitivity and attention to the prevention of FOD by each of us.

SIGNAL INTERFERENCE from the AN/ARC-164 UHF communications radio may result in erratic glideslope/warning flag indications during ILS approaches. If your aircraft is equipped with this type radio and you are assigned a frequency between 327.6 and 336.0 MHZ during an ILS approach, be alert for abnormal glideslope indications. A permanent fix is in the mill; but for now, if you have problems, request a different frequency or consider an alternate approach if one is available.

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